201-15840

IUCLID

Data Set

Existing Chemical	:	ID: 140-08-9
CAS No.	:	140-08-9
EINECS Name	:	tris(2-chloroethyl) phosphite
EC No.	:	205-397-6
Molecular Formula	:	C6H12Cl3O3P

Producer related part

Company	:	Rhodia UK limited
Creation date	:	23.12.2004

Substance related part

Company	:	Rhodia UK limited
Creation date	:	23.12.2004
Status	:	
Memo	:	US EPA HPV Dossier
Printing date	:	16.02.2005
Revision date	:	
Date of last update	:	16.02.2005
Number of pages	:	42
Chapter (profile)	:	Chapter: 1, 2, 3, 4, 5, 6, 7, 8, 10
Reliability (profile)	:	Reliability: without reliability, 1, 2, 3, 4
Flags (profile)	:	Flags: without flag, confidential, non confidential, WGK (DE), TA-Luft (DE), Material Safety Dataset, Risk Assessment, Directive 67/548/EEC, SIDS

1.0.1 APPLICANT AND COMPANY INFORMATION

Type	:	manufacturer
Name	:	Rhodia Inc.
Contact person	:	Ian BARTLETT
Date	:	
Street	:	259 Prospect Plains Road
Town	:	08512 Cranbury, NJ
Country	:	United States
Phone	:	609-860-3913
Telefax	:	609-860-0076
Telex	:	
Cedex	:	
Email	:	ian.bartlett@us.rhodia.com
Homepage	:	

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
09.12.2004

1.0.2 LOCATION OF PRODUCTION SITE, IMPORTER OR FORMULATOR

1.0.3 IDENTITY OF RECIPIENTS

1.0.4 DETAILS ON CATEGORY/TEMPLATE

1.1.0 SUBSTANCE IDENTIFICATION

IUPAC Name	:	Tris(2-chloroethyl) phosphite
Smiles Code	:	ClCCOP(OCCCl)OCCCl
Molecular formula	:	C6 H12 Cl3 O3 P
Molecular weight	:	269.49
Petrol class	:	

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

1.1.1 GENERAL SUBSTANCE INFORMATION

Purity type	:	typical for marketed substance
Substance type	:	organic
Physical status	:	liquid
Purity	:	= 80 - 90 % w/w
Colour	:	Clear, colourless
Odour	:	Characteristic

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

1.1.2 SPECTRA

1.2 SYNONYMS AND TRADENAMES

2-chloroethanol phosphite (3:1)

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

Ethanol, 2-chloro-, phosphite

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

Ethanol, 2-chloro-, phosphite (3:1)

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

Phosphorous acid, tris(2-chloroethyl) ester

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

T2CEP

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
28.11.2003

Tri(2-chloroethyl) phosphite

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

Tris(2-chloroethyl) phosphite

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

Tris(2-chloroethyl)ester of phosphorous acid

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

Tris(b-chloroethyl) phosphite

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

Tris(chloroethyl) phosphite

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

1.3 IMPURITIES

Purity	:	typical for marketed substance
CAS-No	:	126980-25-4
EC-No	:	
EINECS-Name	:	Phosphorous acid, 2-{Bis(2-chloroethoxy)phosphinyl}ethyl bis(2-chloroethyl) ester

Molecular formula : C10 H20 Cl4 O6 P2
Value : ca. 6 - 8 % w/w

31.01.2005

Purity : typical for marketed substance
CAS-No : 107-06-2
EC-No : 203-458-1
EINECS-Name : 1,2-dichloroethane
Molecular formula : C2 H4 Cl2
Value : < 3.5 % w/w

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
13.01.2005

Purity : typical for marketed substance
CAS-No : 107-07-3
EC-No : 203-459-7
EINECS-Name : 2-chloroethanol
Molecular formula : C2 H5 Cl O
Value : < 2 % w/w

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
13.01.2005

Purity : typical for marketed substance
CAS-No : 1070-42-4
EC-No : 213-975-4
EINECS-Name : bis(2-chloroethyl) phosphonate
Molecular formula : C4 H9 Cl2 O3 P
Value : < 1 % w/w

31.01.2005

Purity : typical for marketed substance
CAS-No : 75-21-8
EC-No : 200-849-9
EINECS-Name : ethylene oxide
Molecular formula : C2 H4 O
Value : < .5 % w/w

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
13.01.2005

1.4 ADDITIVES

1.5 TOTAL QUANTITY

1.6.1 LABELLING

1.6.2 CLASSIFICATION

1.6.3 PACKAGING

1.7 USE PATTERN

Type of use : type
Category : Use in closed system

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
28.11.2003

Type of use : industrial
Category : Chemical industry: used in synthesis

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
28.11.2003

Type of use : use
Category : Intermediates

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
28.11.2003

1.7.1 DETAILED USE PATTERN

1.7.2 METHODS OF MANUFACTURE

1.8 REGULATORY MEASURES

1.8.1 OCCUPATIONAL EXPOSURE LIMIT VALUES

1.8.2 ACCEPTABLE RESIDUES LEVELS

1.8.3 WATER POLLUTION

1.8.4 MAJOR ACCIDENT HAZARDS

1.8.5 AIR POLLUTION

1.8.6 LISTINGS E.G. CHEMICAL INVENTORIES

1.9.1 DEGRADATION/TRANSFORMATION PRODUCTS

1.9.2 COMPONENTS

1.10 SOURCE OF EXPOSURE

1.11 ADDITIONAL REMARKS

1.12 LAST LITERATURE SEARCH

Type of search : Internal and External
Chapters covered : 2
Date of search : 30.10.2003

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

Type of search : Internal and External
Chapters covered : 3, 4, 5
Date of search : 30.10.2003

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
25.11.2003

1.13 REVIEWS

2.1 MELTING POINT

Value	:	= 63.5 °C
Sublimation	:	
Method	:	other: calculated
Year	:	
GLP	:	
Test substance	:	
Method	:	Estimation by MPBPWIN programme, v1.41, US-EPA/Syracuse Research
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Estimation performed on the molecular structure of Tris(2-chloroethyl) phosphite
Reliability	:	(2) valid with restrictions Accepted calculation method.
Flag	:	Critical study for SIDS endpoint

28.11.2003

2.2 BOILING POINT

Value	:	= 119 °C at .2 hPa
Decomposition	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Value refers to Tris(2-chloroethyl) phosphite (CAS No 140-08-9).
Reliability	:	(2) valid with restrictions Cited in standard data source (Lewis R.J. Sr (Ed.), Hawley's Condensed Chemical Dictionary, 13th ed., NY, John Wiley & Sons, 1997).
Flag	:	Critical study for SIDS endpoint

04.08.2004

Value	:	= 112 - 115 °C at 2.7 hPa
Decomposition	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Value refers to Tris(2-chloroethyl) phosphite (CAS No 140-08-9).
Reliability	:	(2) valid with restrictions Cited in standard data source (Lide D.R., Milne G.W.A. (Eds), Handbook of Data on Organic Compounds, vol I, 3rd ed., CRC press, 1994).
Flag	:	Critical study for SIDS endpoint

04.08.2004

Value	:	= 125 - 135 °C at 9.3 hPa
Decomposition	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data

Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Value refers to Tris(2-chloroethyl) phosphite (CAS No 140-08-9).
Reliability	:	(2) valid with restrictions Cited in standard data source (National Toxicology Program database, U.S. Department of Health and Human Services)
Flag	:	Critical study for SIDS endpoint

04.08.2004

Value	:	= 76 °C at .027 hPa
Decomposition	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data

Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Value refers to Tris(2-chloroethyl) phosphite (CAS No 140-08-9).
Reliability	:	(4) not assignable

04.08.2004 (1)

Value	:	= 319.3 °C at 1013 hPa
Decomposition	:	
Method	:	other: calculated
Year	:	
GLP	:	
Test substance	:	

Method	:	Estimation by MPBPWIN programme, v1.41, US-EPA/Syracuse Research
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Estimation performed on the molecular structure of Tris(2-chloroethyl) phosphite
Reliability	:	(2) valid with restrictions Accepted calculation method.
Flag	:	Critical study for SIDS endpoint

04.08.2004

2.3 DENSITY

Type	:	relative density
Value	:	= 1.353 at 20 °C
Method	:	
Year	:	
GLP	:	
Test substance	:	no data

Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Value refers to Tris(2-chloroethyl) phosphite (CAS No 140-08-9).
Reliability	:	(2) valid with restrictions Cited in standard data source (Lewis R.J. Sr (Ed.), Hawley's Condensed Chemical Dictionary, 13th ed., NY, John Wiley & Sons, 1997).

28.11.2003

2.3.1 GRANULOMETRY

2.4 VAPOUR PRESSURE

Value	:	= .13 hPa at 20 °C

Decomposition	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Reliability	:	(4) not assignable Cited in Rhodia MSDS.
28.11.2003		
Value	:	< 1.33 hPa at 20 °C
Decomposition	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Value refers to Tris(2-chloroethyl) phosphite (CAS No 140-08-9).
Reliability	:	(2) valid with restrictions Cited in standard data source (Sax N.I., Dangerous Properties of Industrial Materials,4th ed. NY, Van Nostrand Reinhold (Ed), 1975).
Flag	:	Critical study for SIDS endpoint
28.11.2003		
Value	:	= .000405 hPa at 25 °C
Decomposition	:	
Method	:	other (calculated)
Year	:	
GLP	:	
Test substance	:	
Method	:	Estimation by MPBPWIN programme, v1.41, US-EPA/Syracuse Research
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Estimation performed on the molecular structure of Tris(2-chloroethyl) phosphite
Reliability	:	(2) valid with restrictions Accepted calculation method.
Flag	:	Critical study for SIDS endpoint
28.11.2003		

2.5 PARTITION COEFFICIENT

Partition coefficient	:	octanol-water
Log pow	:	= 1.51 at 25 °C
pH value	:	
Method	:	other (calculated)
Year	:	
GLP	:	
Test substance	:	
Method	:	Estimation by KOWWIN programme, v1.67, US-EPA/Syracuse Research
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Estimation performed on the molecular structure of Tris(2-chloroethyl) phosphite
Reliability	:	(2) valid with restrictions Accepted calculation method.
Flag	:	Critical study for SIDS endpoint
28.11.2003		

2.6.1 SOLUBILITY IN DIFFERENT MEDIA

Solubility in	:	Water
Value	:	= 951 mg/l at 25 °C
pH value	:	
concentration	:	at °C
Temperature effects	:	
Examine different pol.	:	
pKa	:	at 25 °C
Description	:	
Stable	:	
Deg. product	:	
Method	:	other: calculated
Year	:	
GLP	:	
Test substance	:	

Method	:	Estimation by WSKOW programme, v1.41, US-EPA/Syracuse Research
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Estimation performed on the molecular structure of Tris(2-chloroethyl) phosphite
Reliability	:	(2) valid with restrictions Accepted calculation method.
Flag	:	Critical study for SIDS endpoint

09.12.2004

2.6.2 SURFACE TENSION

2.7 FLASH POINT

Value	:	= 89 °C
Type	:	closed cup
Method	:	
Year	:	
GLP	:	
Test substance	:	no data

Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Reliability	:	(4) not assignable Cited in Rhodia MSDS.

10.12.2003

2.8 AUTO FLAMMABILITY

2.9 FLAMMABILITY

2.10 EXPLOSIVE PROPERTIES

2.11 OXIDIZING PROPERTIES

2.12 DISSOCIATION CONSTANT

2.13 VISCOSITY

Value	:	= 5 - 6 mm2/s (static) at 25 °C
Result	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Reliability	:	(4) not assignable Cited in Rhodia MSDS.

10.12.2003

Value	:	= 4 - 5 mm2/s (static) at 38 °C
Result	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Reliability	:	(4) not assignable Cited in Rhodia MSDS.

10.12.2003

2.14 ADDITIONAL REMARKS

Memo	:	Undergoes intramolecular isomerisation at higher temperatures.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Reliability	:	(2) valid with restrictions Cited in standard data source (Lewis R.J. Sr (Ed.), Hawley's Condensed Chemical Dictionary, 13th ed., NY, John Wiley & Sons, 1997).

04.08.2004

Memo	:	Self-reacts exothermally when heated above 130 °C.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Reliability	:	(4) not assignable Cited in Rhodia MSDS.

04.08.2004

3.1.1 PHOTODEGRADATION

Type	:	air
Light source	:	
Light spectrum	:	nm
Relative intensity	:	based on intensity of sunlight
INDIRECT PHOTOLYSIS		
Sensitizer	:	OH
Conc. of sensitizer	:	1500000 molecule/cm³
Rate constant	:	= .0000000000219884 cm³/(molecule*sec)
Degradation	:	= 50 % after 11.7 hour(s)
Deg. product	:	
Method	:	other (calculated)
Year	:	
GLP	:	
Test substance	:	
Method	:	Estimation by AOPWIN programme, v1.91, US-EPA/Syracuse Research
Result	:	HALF-LIFE = 0.486 Days (12-hr day, 1.5E6 OH/cm3) HALF-LIFE = 5.837 Hrs (24-hr day, 1.5E6 OH/cm3)
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Estimation performed on the molecular structure of Tris(2-chloroethyl) phosphite
Reliability	:	(2) valid with restrictions Accepted calculation method.
Flag	:	Critical study for SIDS endpoint

09.12.2004

3.1.2 STABILITY IN WATER

Type	:	abiotic
t1/2 pH4	:	at °C
t1/2 pH7	:	at °C
t1/2 pH9	:	at °C
Deg. product	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data
Result	:	Hydrolyses in water
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Refers to Tris(2-chloroethyl) phosphite (CAS No 140-08-9).
Reliability	:	(4) not assignable Cited in standard data source (Lewis R.J. Sr (Ed.), Hawley's Condensed Chemical Dictionary, 13th ed., NY, John Wiley & Sons, 1997).

09.12.2004

Type	:	abiotic
t1/2 pH4	:	at °C
t1/2 pH7	:	at °C
t1/2 pH9	:	at °C
Deg. product	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	no data

Result : Decomposes when dissolved.
Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance : Refers to Tris(2-chloroethyl) phosphite (CAS No 140-08-9).
Reliability : (4) not assignable
Cited in standard data source (Bingham E. et al. (Eds), Patty's Toxicology, 5th ed. NY, John Wiley & Sons, 2001).

09.12.2004

Type : abiotic
t1/2 pH4 : at °C
t1/2 pH7 : at °C
t1/2 pH9 : = 5.1 hour(s) at 23 °C
Degradation : = 100 % after 20 minute(s) at pH 7 and 23 °C
Deg. product : yes
Method : Directive 92/69/EEC, C.7
Year : 2001
GLP : yes
Test substance : other TS
Deg. products : 762-04-9 212-091-6 diethyl phosphonate

Result : At pH 4 triethyl phosphite degrades immediately to diethyl phosphonate. At pH 7 triethyl phosphite hydrolyses completely within 20 minutes.

The following degradation products were detected:

- after 3 h:

	Triethyl phosphite	Diethyl phosphonate	Monoethyl phosphonate
pH 4	0 %	100 %	0 %
pH 7	0 %	89.34 %	10.66 %
pH 9	69.88%	2.35 %	27.77 %

- after about 19 h (one measurement):

ph 9	6.6 %	0 %	93.4 %

At pH 9, the half-life and the rate constant could be estimated: t1/2 = 5.1 hours and k = 3.81 E-05 /s.

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition : The test was perfomed in buffered solutions at pH = 4, 7 and 9, at 23°C, during a period of at least 3h.
Concentrations tested: 0.17% (at pH = 4), 0.19% (pH = 7), 0.17% (pH = 9).
Analytical method: 31-Phosphorus-NMR spectroscopy.
Test substance : Triethyl phosphite, purity 99.3%, CAS No 122-52-1.
Reliability : (1) valid without restriction
Guideline study
Flag : Critical study for SIDS endpoint
09.12.2004

(2)

Type : abiotic
t1/2 pH4 : at °C
t1/2 pH7 : at °C
t1/2 pH9 : at °C
Degradation : = 100 % after 3 hour(s) at pH and °C
Deg. product : yes
Method : other: Test on stability in water with 31-phosphorus NMR
Year : 1993
GLP : no

Test substance	:	other TS
Deg. products	:	762-04-9 212-091-6 diethyl phosphonate
Remark	:	Preliminary test on stability of triethyl phosphite and diethyl phosphonate in water, as screening information for the fish toxicity test (see chapter 4.1, study on triethyl phosphite/brachydanio rerio).
Result	:	Triethyl phosphite Test concentration (%) : 1 Hydrolysis (%) : 100 Time (h) : 3 Product of hydrolysis : Diethyl phosphonate Another measurement was performed after 22h and triethyl phosphite was at that time also not detectable (100% hydrolysis after 22h). In both measurements (after 3 and 22h) diethyl phosphonate was found as the hydrolysis product. Diethyl phosphonate Test concentration (%) : 1 Hydrolysis (%) : 14 Time (h) : 95 Product of hydrolysis : not detected
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	Test was conducted with the test substance in pure water, no control of pH.
Test substance	:	Triethyl phosphite, purity 97.1%, CAS No 122-52-1.
Reliability	:	(2) valid with restrictions Basic data given.
Flag	:	Critical study for SIDS endpoint

09.12.2004 (3)

3.1.3 STABILITY IN SOIL

3.2.1 MONITORING DATA

3.2.2 FIELD STUDIES

3.3.1 TRANSPORT BETWEEN ENVIRONMENTAL COMPARTMENTS

Type	:	fugacity model level III
Media	:	other: air - water - soil - sediment
Air	:	% (Fugacity Model Level I)
Water	:	% (Fugacity Model Level I)
Soil	:	% (Fugacity Model Level I)
Biota	:	% (Fugacity Model Level II/III)
Soil	:	% (Fugacity Model Level II/III)
Method	:	other: calculated
Year	:	
Method	:	Estimation by EPIWIN programme, v3.11, US-EPA/Syracuse Research.
Result	:	- INPUT: Chem Name : Ethanol, 2-chloro-, phosphite (3:1) Molecular Wt: 269.49 Henry's LC : 1.1e-006 atm-m3/mole (Henrywin program) Vapor Press : 0.000304 mm Hg (Mpbpwin program) Liquid VP : 0.000731 mm Hg (super-cooled)

Melting Pt : 63.5 deg C (Mpbpwin program)
Log Kow : 1.51 (Kowwin program)
Soil Koc : 13.3 (calc by model)

Half-Lives (hr), (based upon Biowin (Ultimate) and Aopwin):
Air: 11.67
Water: 1440
Soil: 1440
Sediment: 5760
Biowin estimate: 2.084 (months)

Advection Times (hr):
Air: 100
Water: 1000
Sediment: 5e+004

- RESULTS:

1) Equal emissions in air, water and soil

	Mass Amount (percent)	Half-Life (hr)	Emissions (kg/hr)
Air	0.742	11.7	1000
Water	47.1	1.44e+003	1000
Soil	52	1.44e+003	1000
Sediment	0.118	5.76e+003	0

	Fugacity (atm)	Reaction (kg/hr)	Advection (kg/hr)	Reaction (percent)	Advection (percent)
Air	1.38e-011	903	152	30.1	5.07
Water	1.97e-011	465	966	15.5	32.2
Soil	3.91e-010	513	0	17.1	0
Sediment	1.87e-011	0.29	0.0483	0.00968	0.00161

Persistence Time: 683 hr
Reaction Time: 1.09e+003 hr
Advection Time: 1.83e+003 hr
Percent Reacted: 62.7
Percent Advected: 37.3

2) Emission in air only:

	Mass Amount (percent)	Half-Life (hr)	Emissions (kg/hr)
Air	22.6	11.7	1000
Water	25.1	1.44e+003	0
Soil	52.2	1.44e+003	0
Sediment	0.0627	5.76e+003	0

	Fugacity (atm)	Reaction (kg/hr)	Advection (kg/hr)	Reaction (percent)	Advection (percent)
Air	1.26e-011	823	139	82.3	13.9
Water	3.14e-013	7.4	15.4	0.74	1.54
Soil	1.17e-011	15.4	0	1.54	0
Sediment	2.97e-013	0.00462	0.000768	0.000462	7.68e-005

Persistence Time: 61.3 hr
Reaction Time: 72.4 hr
Advection Time: 398 hr
Percent Reacted: 84.6
Percent Advected: 15.4

3) Emission in water only:

	Mass Amount (percent)	Half-Life (hr)	Emissions (kg/hr)
Air	0.0155	11.7	0
Water	99.7	1.44e+003	1000
Soil	0.0357	1.44e+003	0
Sediment	0.249	5.76e+003	0

	Fugacity (atm)	Reaction (kg/hr)	Advection (kg/hr)	Reaction (percent)	Advection (percent)
Air	9.42e-014	6.18	1.04	0.618	0.104
Water	1.37e-011	322	670	32.2	67
Soil	8.81e-014	0.116	0	0.0116	0
Sediment	1.3e-011	0.201	0.0335	0.0201	0.00335

Persistence Time: 672 hr
Reaction Time: 2.04e+003 hr
Advection Time: 1e+003 hr
Percent Reacted: 32.9
Percent Advected: 67.1

4) Emission in soil only:

	Mass Amount (percent)	Half-Life (hr)	Emissions (kg/hr)
Air	0.0946	11.7	0
Water	21.3	1.44e+003	0
Soil	78.5	1.44e+003	1000
Sediment	0.0532	5.76e+003	0

	Fugacity (atm)	Reaction (kg/hr)	Advection (kg/hr)	Reaction (percent)	Advection (percent)
Air	1.13e-012	73.9	12.5	7.39	1.25
Water	5.73e-012	135	281	13.5	28.1
Soil	3.79e-010	498	0	49.8	0
Sediment	5.43e-012	0.0844	0.014	0.00844	0.0014

Persistence Time: 1.32e+003 hr
Reaction Time: 1.86e+003 hr
Advection Time: 4.49e+003 hr
Percent Reacted: 70.7
Percent Advected: 29.3

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Reliability : (2) valid with restrictions
Accepted calculation method.
Flag : Critical study for SIDS endpoint
09.12.2004

3.3.2 DISTRIBUTION

3.4 MODE OF DEGRADATION IN ACTUAL USE

3.5 BIODEGRADATION

Type : aerobic
Inoculum : predominantly domestic sewage

Concentration	:	20 mg/l related to DOC (Dissolved Organic Carbon) related to
Contact time	:	
Degradation	:	= 69 (±) % after 28 day(s)
Result	:	other: not readily biodegradable
Deg. product	:	
Method	:	OECD Guide-line 301 E "Ready biodegradability: Modified OECD Screening Test"
Year	:	1993
GLP	:	yes
Test substance	:	other TS
Remark	:	Triethyl phosphite reacts within 3h with water to form diethyl phosphonate and ethanol. Diethyl phosphonate then reacts with water to form monoethyl phosphonate and ethanol (see chapter 3.1.2: Stability in Water). In both reactions ethanol is formed which is readily biodegradable. Biodegradation half life of triethyl phosphite: 7 days.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Triethyl phosphite, purity 98.8%, CAS No 122-52-1.
Reliability	:	(1) valid without restriction Guideline study
Flag	:	Critical study for SIDS endpoint

09.12.2004 (3)

Type	:	aerobic
Inoculum	:	predominantly domestic sewage
Concentration	:	4.3 mg/l related to Test substance related to
Contact time	:	
Degradation	:	= 49 (±) % after 28 day(s)
Result	:	other: not readily biodegradable
Deg. product	:	
Method	:	other: "Closed bottle test" (C.4-E) of the directive 79/831 EEC, Annex V (revised version of July 1990)
Year	:	1993
GLP	:	yes
Test substance	:	other TS
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Triethyl phosphite, purity 98.8%, CAS No 122-52-1.
Reliability	:	(1) valid without restriction Guideline study
Flag	:	Critical study for SIDS endpoint

09.12.2004 (3)

3.6 BOD5, COD OR BOD5/COD RATIO

3.7 BIOACCUMULATION

3.8 ADDITIONAL REMARKS

4.1 ACUTE/PROLONGED TOXICITY TO FISH

Type	:	static
Species	:	Brachydanio rerio (Fish, fresh water)
Exposure period	:	96 hour(s)
Unit	:	mg/l
LC0	:	= 120.1
LC50	:	= 251.6
LC100	:	= 526.9
Limit test	:	no
Analytical monitoring	:	yes
Method	:	other: "Acute Toxicity for Fish" (C.1) of the directive 67/548/EEC, Annex V (Draft 1992)
Year	:	1993
GLP	:	yes
Test substance	:	other TS
Remark	:	A preliminary test (see chapter 3.1.2, Stability in water, studies performed with triethyl phosphite) showed that the test substance triethyl phosphite hydrolyses completely within 3 hours to diethyl phosphonate and diethyl phosphonate remains stable (>80% Recovery) for 96 h (duration of the fish test). Diethyl phosphonate was followed analytically in place of triethyl phosphite during the study. Analytical monitoring: GC. In order to ensure that hydrolysis of triethyl phosphite to diethyl phosphonate was largely complete, the test started 2 hours after inserting the test substance, i.e. measurement of abiotic parameters, sampling for accompanying analysis, introducing of test fish. The GC-analysis showed that the measured concentrations of diethyl phosphonate at test start were about 60 % of the concentration that could be calculated from the triethyl phosphite concentration assuming full hydrolysis. Within the first 24 h the concentrations further decreased and remained then nearly constant throughout the test. As the measured diethyl phosphonate concentrations were lower than the calculated nominal values, the test results are based on measured diethyl phosphonate concentrations.
Result	:	The above given results (LC0,LC50,LC100) are estimated values related to triethyl phosphite, and are based on those concentrations reported in the original study: effect concentrations for diethyl phosphonate, the degradation product. The following results related to diethyl phosphonate are given in the original study: LC0 and LC100 are the arithmetic mean of the analytically determined values for diethyl phosphonate (LC0 = 99.8 mg/l, LC100 = 438 mg/l). LC50 is the geometric mean of LC0 and LC100 (LC50 = 209.1 mg/l).
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	- 7-month old fish were used. Length: 2.5 to 3.5 cm - Tank: 300 x 135 x 200 mm; 5l test medium, synthetic origin, prepared according to ISO; no replicates - Initial concentrations were analytically checked every 24 h with GC - Concentrations tested: 250, 354, 500, 707, 1000 mg/l - Temperature during the test: all tests reported the temperature in the range of 20.9 to 22.6 °C - 0xygen concentration: during the test oxygen did not sink below 84% of the saturation level. - pH: at the start of the test the pH was 7.4-7.8, in the middle of the test was reported to be 5.4-5.5 remaining in this pH-range till the end of the test.

Test substance	:	Triethyl phosphite, purity 98.8%, CAS No 122-52-1.
Reliability	:	(1) valid without restriction Guideline study
Flag	:	Critical study for SIDS endpoint
09.12.2004		(3)
Type	:	static
Species	:	Lepomis macrochirus (Fish, fresh water)
Exposure period	:	96 hour(s)
Unit	:	mg/l
NOEC	:	>= 100
LC50	:	> 100
Limit test	:	
Analytical monitoring	:	no
Method	:	other
Year	:	1979
GLP	:	no
Test substance	:	other TS
Method	:	Committee on Methods for Toxicity Tests with Aquatic Organisms, 1975, Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians, EPA-660/3-75-001.
Result	:	In the definitive test, no mortality was observed through the test period in all the vessels. Abnormal surfacing was observed at 48 h and thereafter in the solvent control and at each test material concentration. It is assumed that this abnormal behaviour is due to lower dissolved oxygen concentrations in these vessels.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	TEST ORGANISM: Bluegill sunfish (Lepomis macrochirus Rafinesque) were obtained from a commercial hatchery and maintained in the UCES laboratory at 22°C. Mortality in the stock culture over a one month period was less than 2%. 48 h before starting the test, the fish were taken off feed, and no food was administered thereafter. Fish were selected at random from the stock culture and isolated in a jar of dilution water for 24 h acclimation before testing. In the definitive test, fish were approximately 8-10 months old, with a mean length of 40 (36-43) mm and a mean weight of 0.70 (0.50-0.91) g. Biological loading was 0.47 g/l. DILUTION WATER: Dilution water was obtained from a well on the site, treated with reverse osmosis water system and de-ionised. Dilution water was then reconstituted to a pH of 7.43, total hardness of 40 mg/l as CaCO3, total alkalinity of 29 mg/l as CaCO3 and specific conductance of 160 µmhos/cm. TEST SOLUTIONS: A stock solution of the test material in reagent grade acetone was prepared by weight to a precision of 0.1 mg. Test concentrations were prepared by adding measured volumes of stock solution to dilution water in the test vessels and mixing thoroughly. Nominal test material concentrations were: 10.0, 18.0, 32.0, 56.0 and 100.0 mg/l. One test vessel was prepared for each test material concentration. An additional vessel with 100 % dilution water served as control, another vessel, with a solution of acetone in dilution water at the same concentration as in the highest test concentration, served as solvent control. TEST DESIGN: The definitive test was conducted in chemically clean glass jars, each containing 15 l of test solution and immersed in a constant temperature re-circulating water bath. Ten fish were introduced at random into each of the test, control and solvent control vessels. At the beginning of the test and every 24 h thereafter, dissolved oxygen

and pH in each vessel, and temperature in the water bath, were determined. Mortality and any observable abnormal behaviour were recorded every 24 h.

Test substance : Bis(2-chloroethyl) 2-chloroethylphosphonate, CAS No 6294-34-4, no data.
Reliability : (2) valid with restrictions
Meets generally accepted scientific method and is described in sufficient detail.
Flag : Critical study for SIDS endpoint
09.12.2004 (4)

Type : semistatic
Species : Oryzias latipes (Fish, fresh water)
Exposure period : 96 hour(s)
Unit : mg/l
LC50 : = 170
Limit test :
Analytical monitoring : no data
Method : OECD Guide-line 203 "Fish, Acute Toxicity Test"
Year :
GLP : no data
Test substance : other TS

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition : TEST ORGANISM:
Oryzias latipes were purchased from the market and acclimated for 10 days in dechlorinated drinking water. The hardness was approximately 40 mg/l and pH was 7.2. The batch whose mortality was less than 5% in a week was used for the test.

DILUTION WATER:
Dechlorinated drinking water.

TEST SOLUTIONS:
The five concentrations of the test solutions were prepared spaced by a constant factor of 1.8.

TEST DESIGN:
The test was carried out by the semi-static method with 10 fish in a 2-liter test solution at 20 +/- 1°C without feeding. The concentration of dissolved oxygen was kept more than 60% of the saturation value.

Test substance : Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability : (2) valid with restrictions
OECD Guideline study
Flag : Critical study for SIDS endpoint
09.12.2004 (5)

Type :
Species : Oryzias latipes (Fish, fresh water)
Exposure period : 48 hour(s)
Unit : mg/l
LC50 : = 300
Limit test :
Analytical monitoring : no data
Method : other
Year :
GLP : no data
Test substance : other TS

Method : Japanese Industrial Standard (JIS K 0102-1986-71), "Testing methods for industrial waste water".
Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition : TEST ORGANISM:

Oryzias latipes were obtained from a fish farm. At reception, fish showing abnormal signs were removed. Fish were reared in flow-through system for 3-5 weeks after external disinfection. Fish were acclimated in flow-through system at 25 +/- 2°C for about 28 days.

DILUTION WATER:
Underground water.

TEST SOLUTIONS:
No information.

TEST DESIGN:
Tests were performed in round glass vessels, containing 4 liters of test water. Ten fish were exposed per level. Incubation temperature was 25 +/- 2°C.
The 48h-LC50 was estimated by Doudoroff or Probit methods.

Test substance : Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability : (2) valid with restrictions
Japanese guideline study.
Flag : Critical study for SIDS endpoint
09.12.2004 (6)

Type : static
Species : Oryzias latipes (Fish, fresh water)
Exposure period : 96 hour(s)
Unit : mg/l
LC50 : = 210
Limit test :
Analytical monitoring : no data
Method : other
Year :
GLP : no data
Test substance : other TS

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition : TEST ORGANISM:
Killifish (Oryzias latipes), weighing 0.1-0.2 g, were purchased from a market and acclimated to the laboratory conditions for at least 10 days at 25°C. The fish were not fed for 48 hours before and throughout the experiment.

DILUTION WATER:
Tap water dechlorinated by passage through an activated charcoal column.

TEST SOLUTIONS:
No information.

TEST DESIGN:
Groups of 7-9 killifish were held for 96 hours without feeding in 1 liter of test solution. The water temperature was maintained at 25°C and the beakers were not aerated.

Test substance : Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability : (4) not assignable
Experimental details are missing.
09.12.2004 (7)

Type : static
Species : Carassius auratus (Fish, fresh water)
Exposure period : 96 hour(s)
Unit : mg/l
LC50 : = 90
Limit test :

Analytical monitoring	:	no data
Method	:	other
Year	:	
GLP	:	no data
Test substance	:	other TS
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	TEST ORGANISM: Goldfish (Carassius auratus), weighing 0.8-2.8 g, were purchased from a market and acclimated to the laboratory conditions for at least 10 days at 25°C. The fish were not fed for 48 hours before and throughout the experiment. DILUTION WATER: Tap water dechlorinated by passage through an activated charcoal column. TEST SOLUTIONS: No information. TEST DESIGN: Groups of 7-9 goldfish were held for 96 hours without feeding in 7 liters of test solution. The water temperature was maintained at 25°C and the beakers were not aerated.
Test substance	:	Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability	:	(4) not assignable Experimental details are missing.

09.12.2004 (7)

Type	:	static
Species	:	Oryzias latipes (Fish, fresh water)
Exposure period	:	48 hour(s)
Unit	:	mg/l
LC50	:	= 251
Limit test	:	
Analytical monitoring	:	no data
Method	:	other
Year	:	
GLP	:	no data
Test substance	:	other TS
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	TEST ORGANISM: Oryzias latipes (ca. 3 cm, 0.3 g) was obtained from the market and acclimated for at least one week in dechlorinated water (total hardness approx. 80 mg/l) at 20°C. DILUTION WATER: Dechlorinated water (total hardness approx. 80 mg/l). TEST SOLUTIONS: No information. TEST DESIGN: LC50 was determined by exposing 10 fish to 2 liters of a chemical solution at 20 +/- 1°C for 48 hours with the cycle 8 h dark and 16 h light.
Test substance	:	Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability	:	(4) not assignable Experimental details are missing.

09.12.2004 (8)

4.2 ACUTE TOXICITY TO AQUATIC INVERTEBRATES

Type	:	static
Species	:	Daphnia magna (Crustacea)
Exposure period	:	24 hour(s)
Unit	:	mg/l
EC0	:	= 26.5
EC50	:	= 94.1
EC100	:	= 426
Limit Test	:	no
Analytical monitoring	:	no
Method	:	other: UBA-Verfahrensvorschlag: "Bestimmung der Schwimmunfaehigkeit beim Wasserfloh Daphnia magna, EC0, EC50, EC100; 24h, static" (Mai 1984)
Year	:	1989
GLP	:	yes
Test substance	:	other TS
Method	:	Guideline proposal of the German Federal Environmental Agency (UBA).
Remark	:	A stock solution with 500 mg/l diethyl phosphonate was prepared and stirred for 3 hours with a magnetic stirrer at 50 °C. Stability of diethyl phosphonate over a 24 hour period was demonstrated in a preliminary test for an acute toxicity test with fish (see chapter 4.1, study performed with triethyl phosphite, and chapter 3.1.2, Stability in water, study performed with triethyl phosphite).
Result	:	The above given results (LC0,LC50,LC100) are estimated values related to triethyl phosphite, and are based on those concentrations reported in the original study: effect concentrations for diethyl phosphonate, the degradation product. The following results related to diethyl phosphonate are given in the original study: LC0 and LC100 are nominal concentrations. LC0 = 22 mg/l LC100 = 354 mg/l LC50 was calculated using the Probit Analysis. LC50 = 78.2 mg/l
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	- 6 to 24-hour old daphnids. - Test vessel: cylindric 4 x 6.5 cm; 20ml test medium, natural origin: filtered shallow water; 10 daphnias/vessel; 2 replicates per concentration level. - Reference substance: Potassium dichromate - Initial concentrations were analytically checked every 24 h - Concentrations tested: 5.5, 11, 22, 44, 88, 177, 354 mg/l. - Temperature at the end of the test:19.1-19.4 °C - 0xygen concentration at the end of the test: 8.2-8.4 mg/l - pH at the end of the test: 8 to 6.9 depending on the applied initial concentration. - The starting test conditions were as prescribed in the national guideline.
Test substance	:	Diethyl phosphonate, purity 98.7%, CAS No 762-04-9.
Reliability	:	(2) valid with restrictions Test procedure in accordance with national standard method with acceptable restrictions.
Flag	:	Critical study for SIDS endpoint

09.12.2004 (9)

Type	:	static
Species	:	Daphnia magna (Crustacea)
Exposure period	:	48 hour(s)
Unit	:	mg/l
NOEC	:	= 180
EC50	:	= 240

Analytical monitoring	:	no
Method	:	other
Year	:	1979
GLP	:	no
Test substance	:	other TS
Method	:	Committee on Methods for Toxicity Tests with Aquatic Organisms, 1975, Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians, EPA-660/3-75-009.
Result	:	Due to lack of partial kill, the EC50 and 95% confidence limits were calculated by the binomial method: 24 h-EC50 = 240 (180-320) mg/l 48 h-EC50 = 240 (180-320) mg/l The 48 h-NOEC was observed to be 180 mg/l.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	TEST ORGANISM: Daphnia magna came from a UCES laboratory stock culture, the original population having been obtained from the EPA Environmental Research Laboratory in Duluth, Minnesota. 20 h before starting the test, adults with full brood chambers were isolated into UCES well water. Next morning the newly released instars were carefully removed with a wide bore pipette and transferred to a separate holding vessel. One hour before the test they were fed, and no food was administered thereafter. DILUTION WATER: Dilution water was obtained from a well on the site. The water was vigorously aerated before use and determined by analysis to have a pH of 8.60, total hardness of 206 mg/l as CaCO3, total alkalinity of 135 mg/l as CaCO3 and specific conductance of 700 µmhos/cm. TEST SOLUTIONS: A primary stock solution of 400 mg/ml of the test material in reagent grade acetone was prepared by weight to a precision of 0.1 mg. Test concentrations were prepared by adding measured volumes of stock solution to dilution water in one-litre volumetric flasks and mixing thoroughly. Nominal test material concentrations were: 32, 56, 100 and 180 mg/l. Due to solubility limitations of the test material, two batches of the stock solution (400 mg/ml) and dilution water were combined in two 500 ml volumetric flasks, increasing the obtainable tested concentration to 320 mg/l. Two hundred ml of each concentration was decanted into each of four test beakers. Four beakers, as control, contained 200 ml each of 100 % dilution water, and four beakers, as solvent control, each contained 200 ml solution of acetone in dilution water, at the same acetone level as in the highest test concentration. TEST DESIGN: The definitive test was conducted in 250 ml glass beakers, each containing 200 ml of test solution. Four test vessels were prepared for each test material concentration, for the control and the solvent control. Five organisms were introduced at random into each of the 20 test, 4 control and 4 solvent control beakers and held for the duration of the test in a refrigerator incubator at a constant temperature of 21°C. At the beginning of the test and at 48 h, dissolved oxygen and pH were determined in each beaker. Mortality was recorded at 24 and 48 h. The EC50 and its 95% confidence limits were determined for the 24 and 48 h exposure periods. Calculations were based on nominal concentrations of the test material. The NOEC was determined by observation at 48 h.
Test substance	:	Bis(2-chloroethyl) 2-chloroethylphosphonate, CAS No 6294-34-4, no data.
Reliability	:	(2) valid with restrictions Meets generally accepted scientific method and is described in sufficient detail.
Flag	:	Critical study for SIDS endpoint

09.12.2004 (10)

Type	:	static
Species	:	Daphnia magna (Crustacea)
Exposure period	:	24 hour(s)
Unit	:	mg/l
EC50	:	= 451
Analytical monitoring	:	no data
Method	:	other
Year	:	
GLP	:	no data
Test substance	:	other TS
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability	:	(2) valid with restrictions German guideline study.
Flag	:	Critical study for SIDS endpoint

09.12.2004 (11)

Type	:	semistatic
Species	:	other aquatic worm: Dugesia japonica
Exposure period	:	7 day(s)
Unit	:	mg/l
EC50	:	= 158
Analytical monitoring	:	no data
Method	:	other
Year	:	
GLP	:	no data
Test substance	:	other TS
Result	:	7d-EC50 (abnormal head regeneration) = 158 mg/l 7d-LC50 (mortality) = 158 mg/l
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	TEST ORGANISM: Dugesia japonica were collected from a stream around which there was no source of pollution. The breeding liquid was prepared by dissolving 3.74 g of NaCl, 0.49 g of KCl and 8.55 g of CaCl2 into distilled water to make 500 ml. This was diluted 100 times and neutralised by NaHCO3 before use. Organisms were left without food for over 7 days in the breeding liquid to excrete alimentary canal contents. Those of about 2 cm long were used. DILUTION WATER: No information. TEST SOLUTIONS: No information. TEST DESIGN: Dugesia japonica were cut in two parts : head and body part. The body part was used for the head regeneration test. Ten body parts were put in 100 ml of a test solution and left at 20 +/- 1°C for 7 days. Observation for head regeneration was carried out on days 3, 4, 5, 6 and 7, and the test solution was replaced at every observation. LC50 after 7 days was also determined.
Test substance	:	Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability	:	(4) not assignable Experimental details are missing.

09.12.2004 (8)

Type	:	
Species	:	other aquatic crustacea: Moina macrocopa
Exposure period	:	3 hour(s)

Unit	:	mg/l
EC50	:	= 1000
Analytical monitoring	:	no data
Method	:	other
Year	:	
GLP	:	no data
Test substance	:	other TS
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition	:	TEST ORGANISM: Water flea Moina macrocopa of unknown origin. The culture medium for breeding Moina macrocopa was prepared by mixing liquids A and B in the ratio 9 to 1, and was neutralised by NaHCO3 before use. Liquid A was prepared by boiling 1 liter of distilled water with 4 g of rice straw for 2 hours, and after filtration it was left for 24 hours to increase bacteria. Liquid B was a soil extract prepared by the same method as for liquid A. Moina macrocopa was cultured in the medium, and those of about 5 days old were used. DILUTION WATER: No information. TEST SOLUTIONS: No information. TEST DESIGN: Ten Moina macrocopa in 100 ml of test solution were put in a 250-ml vial vessel at 20 +/- 1°C, and survivors were counted after 3 hours.
Test substance	:	Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability	:	(4) not assignable Experimental details are missing.

09.12.2004 (8)

4.3 TOXICITY TO AQUATIC PLANTS E.G. ALGAE

Species	:	Scenedesmus subspicatus (Algae)
Endpoint	:	growth rate
Exposure period	:	72 hour(s)
Unit	:	mg/l
NOEC	:	= 37
EC50	:	> 73.6
Limit test	:	no
Analytical monitoring	:	yes
Method	:	Directive 92/69/EEC, C.3
Year	:	1999
GLP	:	yes
Test substance	:	other TS
Remark	:	For the performance of this test, the results of the preliminary test before testing fish toxicity (see chapter 4.1 and 3.1.2, studies with triethyl phosphite) were taken into account: the test substance triethyl phosphite hydrolyses completely within 3 hours to diethyl phosphonate and diethyl phosphonate remains stable for 72 h (duration of algae test). Analytical monitoring: TOC-measurement (1 mg/l TOC corresponds to 2.9 mg/l diethyl phosphonate). In order to ensure that hydrolysis of triethyl phosphite to diethyl phosphonate was almost complete, the test started 2 hours after inserting the test substance, i.e. measurement of abiotic parameters, sampling for accompanying analysis, introducing of test inocolum.
Result	:	The above given results (NOEC,LOEC,EC50) are estimated values related

to triethyl phosphite, and are based on those concentrations reported in the original study: effect concentrations for diethyl phosphite, the degradation product.

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition : Test conditions followed the EU-guideline given above. In the following are given some characteristics about the test system:
- Erlenmeyer flasks of 300 ml with 100ml test medium: deionised water. Ca.43300 cells/ml were injected. No replicates.
- Initial concentrations were analytically checked at the beginning and at the end of the test by measuring TOC.
- Concentrations tested: 2.8, 5.6, 11.25, 22.5, 45, 90 mg/l.
- Temperature was during the tests in the range of 21-25°C.
- Oxygen concentration was not controlled.
- pH was approx. 8 at the beginning and 10 at the end of the test.

Test substance : Triethyl phosphite, purity 98.8%, CAS No 122-52-1.
Reliability : (1) valid without restriction
Guideline study
Flag : Critical study for SIDS endpoint
09.12.2004 (12)

Species : Selenastrum capricornutum (Algae)
Endpoint : other: overall growth, maximum specific growth rate, Maximum Standing Crop, algal biomass, duration of lag phase
Exposure period : 14 day(s)
Unit : mg/l
NOEC : = 18
Limit test :
Analytical monitoring : no
Method : other
Year : 1980
GLP : no
Test substance : other TS

Method : Miller W.E. et al., 1978, The Selenastrum capricornutum Printz Algal Assay Bottle Test, EPA-600/9-78-018.
Result : Effect on overall growth : reduced in 56 and 100 mg/l treatments
Effect on maximum specific growth rate : reduced in 56 mg/l treatment
Effect on MSC (cells/ml) : reduced in 32, 56 and 100 mg/l treatments
Effect on algal biomass : reduced in 56 and 100 mg/l treatments
Effect on lag period : lengthened in 32, 56 and 100 mg/l treatments
NOEC = 18 mg/l (relative to the solvent control on any of the above endpoints)

Raw data presented in the test report were used to calculate, by log Probit regression, the ErC50 with 95% confidence limits after 72 h and 96 h of exposition. Results expressed as nominal concentrations of the test material are:
72 h- ErC50 = 113 (64.1 - 200) mg/l
96 h- ErC50 = 73.5 (51.2 - 105) mg/l
Growth of the control cultures were exponential throughout the 96 h test period.

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test condition : TEST ORGANISM:
Selenastrum capricornutum came from UCES stock cultures. Algal stocks were maintained in synthetic algal nutrient medium (Miller et al., 1978) in continuously shaken Erlenmeyer flasks (100 rpm) at 24 ± 2°C under continuous illumination. Transfers were made regularly into fresh medium to provide 7-day old cultures for assay inoculations.

TEST MEDIUM:
Synthetic algal medium according to Miller et al. (1978), passed through a 0.22 µm porosity membrane filter into a sterile container.

TEST SOLUTIONS:
A 200 mg/ml stock solution of the test material in reagent grade N,N-dimethylformamide (DMF) was prepared by weight to a precision of 0.1 mg. Appropriate volumes of stock solutions were added to measured volumes of algal medium to yield final test material concentrations of 10, 18, 32, 56 and 100 mg/l. The control was algal medium only. The solvent control contained an amount of DMF equivalent to the highest DMF concentration in any test treatment, i.e. 0.5 ml/l.

TEST DESIGN:
Test vessels were chemically clean sterile 250 ml Erlenmeyer flasks fitted with foam stoppers. After thorough mixing, 60 ml of each test solution was aseptically added to each of three replicate flasks. An algal inoculum was prepared by centrifuging and re-suspending twice a seven-day old stock culture in a 15 mg/l wash solution of NaHCO3. A 0.88 ml volume of cell suspension was aseptically added to 60 ml test solution in each flask, yielding a nominal inoculum concentration of 3000 cells/ml.
Test flasks were continuously agitated at 100 rpm under continuous cool white fluorescent illumination. Temperature, maintained at 24 ± 2°C, was recorded on counting days.
Cell counts were made with a hemacytometer on days 0, 1, 2, 3, 4, 7, 9, 11 and 14. Four counts per replicate were made each time.
Maximum standing crop (MSC) is defined as the maximum algal biomass (mg dry weight/l culture) attained during incubation. It is considered to have been reached when the rate of increase in biomass, as determined by cell counts, falls below 5% per day.

STATISTICAL ANALYSIS:
Raw data from replicate flasks during the exposure period were subjected to two-way logarithmic analysis of variance (LOGANOVA) and to Duncan's (1955) new multiple range test to locate significant differences among treatment means. All differences were considered statistically significant at $p<0.05$.
Mean cell counts were used to calculate the maximum specific growth rate, defined as the highest specific growth rate occurring at any time during incubation, for each flask. The maximum specific growth rate for a set of replicate flasks, determined by averaging the values of the individual flasks, were subjected to one-way analysis of variance (ANOVA) and to Duncan's test. ANOVA and Duncan's test were applied to mean MSC and to mean dry weights of algal biomass.

Test substance : Bis(2-chloroethyl) 2-chloroethylphosphonate, CAS No 6294-34-4, no data.
Reliability : (2) valid with restrictions
Meets generally accepted scientific method and is described in sufficient detail.
Flag : Critical study for SIDS endpoint
09.12.2004 (13)

Species : Scenedesmus subspicatus (Algae)
Endpoint : biomass
Exposure period : 96 hour(s)
Unit : mg/l
EC50 : = 1.2
Limit test :
Analytical monitoring : no data
Method : other
Year :
GLP : no data
Test substance : other TS

Method : DIN 38412, Part 9 (1989).
Result : 48 h :

EbC50 = 2.0 mg/l
ErC50 = 5.0 mg/l

72 h :
EbC50 = 1.1 mg/l
ErC50 = 3.6 mg/l

96 h :
EbC50 = 1.2 mg/l

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance : Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability : (2) valid with restrictions
German guideline study.
Flag : Critical study for SIDS endpoint
09.12.2004 (11)

4.4 TOXICITY TO MICROORGANISMS E.G. BACTERIA

4.5.1 CHRONIC TOXICITY TO FISH

4.5.2 CHRONIC TOXICITY TO AQUATIC INVERTEBRATES

Species : Daphnia magna (Crustacea)
Endpoint : reproduction rate
Exposure period : 21 day(s)
Unit : mg/l
NOEC : = 13
Analytical monitoring : no data
Method : other
Year :
GLP : no data
Test substance : other TS

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance : Tris(2-chloroethyl)phosphate, CAS No 115-96-8, no data.
Reliability : (2) valid with restrictions
German guideline study.
09.12.2004 (11)

4.6.1 TOXICITY TO SEDIMENT DWELLING ORGANISMS

4.6.2 TOXICITY TO TERRESTRIAL PLANTS

4.6.3 TOXICITY TO SOIL DWELLING ORGANISMS

4.6.4 TOX. TO OTHER NON MAMM. TERR. SPECIES

4.7 BIOLOGICAL EFFECTS MONITORING

4.8 BIOTRANSFORMATION AND KINETICS

4.9 ADDITIONAL REMARKS

5.0 TOXICOKINETICS, METABOLISM AND DISTRIBUTION

5.1.1 ACUTE ORAL TOXICITY

Type	:	LD50
Value	:	= 100 mg/kg bw
Species	:	rat
Strain	:	Sprague-Dawley
Sex	:	male/female
Number of animals	:	
Vehicle	:	other
Doses	:	25, 50, 100, 200, 300 mg/kg bw
Method	:	
Year	:	1977
GLP	:	no
Test substance	:	
Method	:	Protocol very similar to OECD 401 method. The test substance was administered as a 10 % solution in corn oil.
Result	:	The mortality was 20, 10, 50, 70 and 90 % respectively for the dose rates 25, 50, 100, 200 and 300 mg/kg bw. Deaths occurred from 6 hours (one animal at 50 mg/kg) to 14 days (one animal at 25 mg/kg) after the administration. Among the animals that died, 20 out of 24 animals died 24 hours after administration. No gross pathologic alterations were noted among any of the treated animals. Autopsies revealed only chronic pulmonary disease (minor) in one animal at 25 mg/kg and in another one at 50 mg/kg. Observed symptoms : Decreased locomotor activity, piloerection, ptosis, loss of righting reflex. Normal body activity returned within 8 days in all surviving animals.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Tris(2-chloroethyl) phosphite (CAS No 140-08-9) Sample MCTR-212-77, lot No 0307701 Batch analysis not available in the report
Conclusion	:	The acute oral LD50 was 100 +/- 15 mg/kg bw.
Reliability	:	(2) valid with restrictions Reliability score 2 is assigned because there is a slight deviation from OECD 401 method : Each dosed group was not composed of animals of same gender but was composed of 5 males and 5 females. Results were not expressed for each sex. The time of appearance and duration of symptoms were not specified. The housing conditions were not detailed.
Flag	:	Critical study for SIDS endpoint

16.02.2005 (14)

Type	:	LD50
Value	:	= 131 mg/kg bw
Species	:	rat
Strain	:	Sprague-Dawley
Sex	:	male/female
Number of animals	:	
Vehicle	:	other
Doses	:	79.01; 118.5; 177.8; 266.7 mg/kg bw
Method	:	

Year	:	1972
GLP	:	no
Test substance	:	
Method	:	Protocol very similar to OECD 401 method. The test substance was dosed as a suspension in corn oil.
Result	:	The mortality was 0, 25, 100 and 100 % respectively for the dose rates 79.01, 118.5, 177.8 and 266.7 mg/kg bw. Deaths occurred from 6 to 22 hours after the administration depending on the animals. No gross pathologic alterations were noted among any of the dosed animals. Observed symptoms : Hypoactivity and ruffed fur were observed in all treated animals. These signs were observed 30 minutes after the administration and lasted for a minimum of 1 day. Muscular weakness was noted 1 hour after the administration of all dose rates except the lowest one (79.01 mg/kg). Labored breathing and diarrhea were observed 1 hour after the administration of the 177.8 and 266.7 mg/kg dose rates.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Tris(2-chloroethyl) phosphite (CAS No 140-08-9) Lot No 110913100 Batch analysis not available in the report
Conclusion	:	The acute oral LD50 was 131 +/- 13 mg/kg bw.
Reliability	:	(2) valid with restrictions Reliability score 2 is assigned because there is a slight deviation from OECD 401 method : Four animals were treated per dose rate instead of the required five animals. Each dosed group was not composed of animals of same gender but was composed of 2 males and 2 females.
16.02.2005		(15)

Type	:	LD50
Value	:	= 305 mg/kg bw
Species	:	rat
Strain	:	Sprague-Dawley
Sex	:	male/female
Number of animals	:	
Vehicle	:	other
Doses	:	118.5, 177.8, 266.7, 400.0, 600.0 mg/kg bw
Method	:	
Year	:	1972
GLP	:	no
Test substance	:	
Method	:	Protocol very similar to OECD 401 method. The test substance was administered as a suspension in corn oil.
Result	:	The mortality was0, 25, 25, 75 and 100 % respectively for the dose rates 118.5, 177.8, 266.7, 400.0 and 600.0 mg/kg bw. Deaths occurred from 2.5 hours (for one animal) to 2 days (one animal) after the administration. Among the animals that died, 7 out of 9 animals died 6 to 22 hours after the administration. No gross pathologic alterations were noted among any of the treated animals. Observed symptoms: Hypoactivity and ruffed fur for all treated animals. These signs were

observed 30 minutes after the administration and lasted for a minimum of 1 day.
Muscular weakness was noted 1 hour after the administration at all dose rates except the lowest one (118.5 mg/kg).
Labored breathing and diarrhea were observed 1 hour after the administration of the two highest dose rates.
Prostration was observed 1 hour after the administration of the highest dose rate.

Source : Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance : Tris(2-chloroethyl) phosphite (CAS No 140-08-9)
Lot No 03051
Batch analysis not available in the report
Conclusion : The acute oral LD50 was 305 +/- 65 mg/kg bw.
Reliability : (2) valid with restrictions
Reliability score 2 is assigned because there is a slight deviation from OECD 401 method :
Four animals were employed per dose rate instead of the required 5 animals.
Each dosed group was not composed of animals of same gender but was composed of 2 males and 2 females.

16.02.2005 (16)

Type : LD50
Value : = 370 mg/kg bw
Species : rat
Strain : no data
Sex : male
Number of animals :
Vehicle : other
Doses : 150; 200; 400; 800 mg/kg bw
Method :
Year : 1972
GLP : no
Test substance :

Method : The protocol of this study is very similar to OECD 401 method.
Each dose rate was administered to 6 animals.
The test substance was dosed as a 139 mg/mL solution in corn oil.

The deviations from OCDE 401 method are the following :
- The test was terminated after 7 days instead of the standard 14-day period.
- The conditions of housing were not specified.
- The method of LD50 calculation was not specified.

Remark : The strain of male albinos rats was not specified.
The observation period was shortened from 14 to 7 days because no signs of toxicity nor any mortality were observed between day 3 and day 7.
During this period the surviving animals were normal and gained weight.

Result : The rats treated at 150 mg/kg bw showed no signs of intoxication nor mortality.
At the dose rate of 200 mg/kg, signs of intoxication were observed from 4 to 8 hours after dosing in 1 rat. This animal died on Day 2.
Two rats treated at 400 mg/kg showed symptoms during the period 0-4 hrs after administration. One rat died during the period 4-8 hrs and the other one on Day 2.
All rats treated at 800 mg/kg showed signs of intoxication 0-4 hrs after the administration and died during the four following hours (period 4-8 hrs).

The observed signs of intoxication were: ataxia, depression, hypothermia, TSP (Toleration of side position), gasping.

Gross autopsy finding : none.

Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Tris(2-chloroethyl) phosphite (CAS No 140-08-9) Batch analysis not available in the report.
Conclusion	:	The acute oral LD50 was 370 +/- 52 mg/kg bw.
Reliability	:	(2) valid with restrictions The reliability score 2 is assigned because the observation period was shortened from the required 14 to 7 days.

16.02.2005 (17)

Type	:	LD50
Value	:	< 7.5 mg/kg bw
Species	:	rat
Strain	:	other
Sex	:	male
Number of animals	:	
Vehicle	:	
Doses	:	7.5; 15.0; 30.0; 60.0; 120.0 mg/kg bw
Method	:	
Year	:	1971
GLP	:	no
Test substance	:	

Method	:	The protocol of this study is very similar to OECD 401 method. The deviations are the absence of description of observations in the report and the conditions of housing were not specified. Each dose rate was administered to 5 animals. T2CEP was dosed as supplied.
Remark	:	Rats of the Sherman-Wistar strain were employed for this test.
Result	:	The mortality was 100% 24 hours after the administration for all dose rates.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Tris(2-chloroethyl) phosphite (CAS No 140-08-9) Batch analysis not available in the report.
Reliability	:	(3) invalid The reliability score 3 is assigned because the dose volumes were very low (between 1.1 and 17.6 microlitres per animal) and consequently the accuracy of the administered quantities may be poor.

16.02.2005 (18)

5.1.2 ACUTE INHALATION TOXICITY

5.1.3 ACUTE DERMAL TOXICITY

5.1.4 ACUTE TOXICITY, OTHER ROUTES

5.2.1 SKIN IRRITATION

5.2.2 EYE IRRITATION

5.3 SENSITIZATION

5.4 REPEATED DOSE TOXICITY

5.5 GENETIC TOXICITY 'IN VITRO'

Type	:	Mammalian cell gene mutation assay
System of testing	:	L5178Y Mouse lymphoma cells, heterozygous at the thymidine kinase locus (TK +/-).
Test concentration	:	Without metabolic activation : 0.006, 0.008, 0.010, 0.012, 0.014, 0.016 µL/mL. With metabolic activation : 0.10, 0.20, 0.30, 0.40 µL/mL.
Cycotoxic concentr.	:	Without metabolic activation : precipitous cytotoxicity beyond 0.012 µL/mL. With metabolic activation : cytotoxicity beyond 0.4 µL/mL.
Metabolic activation	:	with and without
Result	:	negative
Method	:	OECD Guide-line 476
Year	:	1982
GLP	:	yes
Test substance	:	
Method	:	No reference to the OECD guide-line 476 was made in the report but this study is performed according to this method and fulfilled all of its requirements.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Tris(2-chloroethyl) phosphite (CAS No 140-08-9) Lot No 0501133 Batch analysis not available in the report
Conclusion	:	The treatment with T2CEP concentrations that were below the cytotoxicity level (<0.012 µL/mL without metabolic activation and <0.4 µL/mL with activation) did not induce a significant increase in the mutant frequency of L5178Y mouse lymphoma cells.
Reliability	:	(1) valid without restriction
Flag	:	Critical study for SIDS endpoint

16.02.2005 (19)

Type	:	Ames test
System of testing	:	Salmonella typhimurium strains : 98, 100, 1535, 1537, 1538.
Test concentration	:	0.001, 0.01, 0.1, 1.0 and 5.0 µL/plate
Cycotoxic concentr.	:	> 5 µL/plate
Metabolic activation	:	with and without
Result	:	negative
Method	:	
Year	:	1977
GLP	:	no
Test substance	:	
Method	:	The protocol is very similar to OECD guideline 471. Deviation : Neither the strain Salmonella typhimurium 102 nor the strain Escherichia coli WP2 were employed.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Tris(2-chloroethyl) phosphite (CAS No 140-08-9) Sample MCTR-212-77 lot No 0307701. Batch analysis not available in the report.
Conclusion	:	The test compound did not demonstrate mutagenic activity under these test conditions.
Reliability	:	(2) valid with restrictions The absence of the strain S. typhimurium 102 and Escherichia coli WP2 constitute the only restriction regarding the reliability.
Flag	:	Critical study for SIDS endpoint

16.02.2005 (20)

Type	:	Mitotic recombination in Saccharomyces cerevisiae
System of testing	:	Strain Saccharomyces cerevisiae D4
Test concentration	:	0.001, 0.01, 0.1, 1.0, 5.0 µL/plate
Cycotoxic concentr.	:	No observed cytotoxicity at the highest dose
Metabolic activation	:	with and without
Result	:	negative
Method	:	
Year	:	1977
GLP	:	no
Test substance	:	
Method	:	The protocol is very similar to OECD guideline 481.
Source	:	Rhodia Consumer Specialties LTD Oldbury, West Midlands
Test substance	:	Tris(2-chloroethyl) phosphite (CAS No 140-08-9) Sample MCTR-212-77, lot No 0307701. Batch analysis not available in the report.
Conclusion	:	The test compound did not demonstrate mutagenic activity under the test conditions.
Reliability	:	(2) valid with restrictions The reliability score 2 was asssigned because : - The negative result was not confirmed by another test conducted with a cell culture in stationary phase of growth. - The number of plates/concentration was not specified.
Flag	:	Critical study for SIDS endpoint

16.02.2005 (20)

5.6 GENETIC TOXICITY 'IN VIVO'

5.7 CARCINOGENICITY

5.8.1 TOXICITY TO FERTILITY

5.8.2 DEVELOPMENTAL TOXICITY/TERATOGENICITY

5.8.3 TOXICITY TO REPRODUCTION, OTHER STUDIES

5.9 SPECIFIC INVESTIGATIONS

5.10 EXPOSURE EXPERIENCE

5.11 ADDITIONAL REMARKS

6.1 ANALYTICAL METHODS

6.2 DETECTION AND IDENTIFICATION

7.1 FUNCTION

7.2 EFFECTS ON ORGANISMS TO BE CONTROLLED

7.3 ORGANISMS TO BE PROTECTED

7.4 USER

7.5 RESISTANCE

8.1 METHODS HANDLING AND STORING

8.2 FIRE GUIDANCE

8.3 EMERGENCY MEASURES

8.4 POSSIB. OF RENDERING SUBST. HARMLESS

8.5 WASTE MANAGEMENT

8.6 SIDE-EFFECTS DETECTION

8.7 SUBSTANCE REGISTERED AS DANGEROUS FOR GROUND WATER

8.8 REACTIVITY TOWARDS CONTAINER MATERIAL

(1) Blinova G.G. (1982), Zhurnal Obshchei Khimii, 52(12):2798-9.

(2) Bayer AG (2001), Internal Study A/01/0021/01 LEV: Test on abiotic degradation (2001.08.21).

(3) Bayer AG (1993), Internal study 261A/91: Investigation of the Ecological Properties of Triehtylphosphite (1993.02.24),
- Toxicity to Bacteria according to ISO 8192,1986
- Acute Toxicity to Fish according to Directive 67/548/EEC,1992 (incl. a preliminary test on stability of Tri- and Diethyl phosphite in water)
- Modified OECD Screening Test according to Directive 84/449/EEC, 1984
- Closed Bottle Test according to Directive 79/831/EEC, 1990.

(4) VILKAS A.G., 1979, "The Acute Toxicity of MCTR-15-79 to the Bluegill Sunfish Lepomis macrochirus Rafinesque", Union Carbide Environmental Services, UCES project No. 11506-05-09, Company report number M150-79, Rhodia internal report (unpublished report).

(5) Yoshioka Y. et al. (1993), "A quantitative structure-activity relationship study and ecotoxicological risk quotient for the protection from chemical pollution", Environmental Toxicology and Water Quality, 8:87-101.

(6) Biodegradation and bioaccumulation data of existing chemicals based on the CSCL Japan, Compiled under the supervision of Chemical Products Safety Division, Basic Industries Bureau, MITI, Chemical Inspection & Testing Institute (Ed.), JP, 1992.

(7) Sasaki K. et al. (1981), "Toxicity, absorption and elimination of phosphoric acid triesters by Killifish and Goldfish", Bull. Environm. Contam. Toxicol. 27:775-782.

(8) Yoshioka Y. et al. (1986), "Correlation of the five test methods to assess chemical toxicity and relation to physical properties", Ecotoxicology and Environmental Safety 12:15-21.

(9) Bayer AG (1989), Internal study 98A/89: Acute Toxicity Test with Daphnia magna to Diethylphosphite according to the German BUA-Proposal of Mai 1984 (1989.08.10).

(10) VILKAS A.G., 1979, "The Acute Toxicity of MCTR-15-79 to the Water Flea Daphnia magna Straus", Union Carbide Environmental Services, UCES project No. 11506-05-10, Company report number M151-79, Rhodia internal report (unpublished report).

(11) Kühn et al. (1989), "Schadstoffe von Umweltchemikalien im Daphnien-Reproduktionstest als Grundlage für die Bewertung der Umweltgefährlichkeit in aquatischen Systemen - Verlängerter Toxizitätstest bei Daphnia magna als Grundlage für Wasserqualitätsstandards", UFOPLAN-Ref. Nr. 106 03 052/01.332, Institut für Wasser-, Boden- und Lufthygiene des Bundesgesundheitsamtes, Berlin.

(12) Bayer AG (1999), Internal Study 895A/99: Alga, Growth Inhibition Test according to Directive 92/69/EEC (1999.09.29).

(13) VILKAS A.G., 1980, "The Toxicity of MCTR-15-79 to Selenastrum capricornutum Printz", Union Carbide Environmental Services, UCES project No. 11506-05-11, Company report number M154-79, Rhodia internal report (unpublished report).

(14) No author specified,1977,"Report on oral LD50 in Rats", Cannon Laboratories inc., Report No.M2121-77, Rhodia internal report (unpublished report).

(15) No author specified,1972,"Acute oral toxicity studies with two samples in albinos Rats", Industrial Bio-Test laboratories Inc., Report No.M9191-72, Rhodia internal report (unpublished report).

(16) No author specified,1972,"Acute oral toxicity studies with two samples in albinos Rats", Industrial Bio-Test laboratories Inc., Report No.M9192-72, Rhodia internal report (unpublished report).

(17) Saunders H.,1972,"Acute oral toxicity of tris-2-chloroethyl phosphite in Rats", AME Biological Research inc., Report No.M9171-72, Rhodia internal report (unpublished report).

(18) Gabriel K.L.,1971,"Acute oral toxicity - Rats", Biosearch inc., Report No.M9103-71, Rhodia internal report (unpublished report).

(19) Dooley J.F.,1982,"Evaluation of the mutagenic potential of tris (2-chloroethyl) phosphite in the mouse lymphoma (L5178Y/TK +/-) mutagenesis assay", Mobil environmental and health science laboratory, Report No.11871, Rhodia internal report (unpublished report).

(20) Brusick D.,1977,"Mutagenicity evaluation of MCTR-212-77", Litton Bionetics inc., Report No.M2122-77, Rhodia internal report (unpublished report).

10.1 END POINT SUMMARY

10.2 HAZARD SUMMARY

10.3 RISK ASSESSMENT